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AUTHOR Luster, Tom
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ABSTRACT

Examined were antecedents and behavioral correlates of parental perceptions of efficacy, using data from a national survey of 3,000 parents and a study of 65 mother-infant dyads. Survey data were used to determine what factors are predictive of parental perceptions of efficacy. Dyadic data were used primarily to examine the relation between perceptions of parental efficacy and the quality of care mothers provided for their infants. Survey analyses indicated that parent income and education were related to perceptions of parental efficacy, and that race was related to parents' perceptions of control. Marital status was not predictive of parents' beliefs about their ability to influence child outcomes. Beliefs about the controllability of desired outcomes were related to parents' beliefs regarding effective parenting practices. Observation/interview findings suggested that the more control mothers believe they have over developmental outcomes, the more they will do to try to provide their chidren with optimal rearing conditions, and that mothers believe they have more control over social-emotional outcomes than cognitive outcomes. Mothers who perceived themselves as being the most competent parents did not provide the most supportive environments for their infants. Mothers of second or later born and difficult children tended to believe they had less control over developmental outcomes. (RH)

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THE ANTECEDENTS AND CORRELATES OF PARENTAL PERCEPTIONS OF EFFICACY

Tom Luster
Department of Family and Child Ecology
Michigan State University

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THE ANTECEDENTS AND CORRELATES OF PARENTAL PERCEPTIONS OF EFFICACY

Increasingly in recent years, researchers have investigated parents' beliefs regarding child development and developmental influences, and have explored the relation between these beliefs and parenting behavior (Sigel, 1985). The present study examines parental perceptions of efficacy -- that is, parents' beliefs regarding their ability to influence the development of their children. Questions addressed in this study include: to what extent do parents believe they can influence the developmental outcomes of their children? Do parents believe they can influence some outcomes (e.g., cognitive outcomes or social-emotional outcomes) more than others? What factors influence parental perceptions of efficacy? Are parents who believe they have considerable control over developmental outcomes more involved with their infants than parents who believe they have less control over developmental outcomes?

The research that provided the impetus for the present study was conducted by Tulkin and his colleagues (Tulkin and Kagan, 1972; Tulkin and Cohler, 1973; Tulkin, 1977). Tulkin observed the interactions of 30 middle-class and 26 working-class mother-infant daughter dyads in their homes. He found that middle-class mothers engaged in more verbal interactions with their infants and provided their infants with a greater variety of stimulation. In an effort to understand the reasons for these differences in maternal behavior, Tulkin informally interviewed several of the mothers after the observations had been completed. Based on these interviews, Tulkin argued that working-class mothers, in contrast to middle-class mothers, felt that there was little they could do to influence the development of their children.

One of the limitations of the Tulkin study was that the data on perceptions of parental efficacy were collected in informal, post hoc interviews with several of the mothers who participated in the study. No clear measure of perceived efficacy was available, thus precluding the possibility of systematic analyses with this variable. A second limitation of the study was that his sample included only white, primiparous mothers with infant daughters who resided in the Boston area. Tulkin (1977) recognized these limitations and wrote:

> One attitudinal variable that appears to derive directly from social structural position, and has behavioral correlates in child rearing practice is the parent's sense of his or her own power and ability to control fate, both personal and familial ... Thus one of the process variables we need to look at in our efforts to understand social class is likely to be related to the way in which lower-class status carries with it a sense of powerlessness and fatalism. Clearly, however, far more work is needed to document the demography of attitudinal and behavioral differences across social classes before it can be assumed that this is indeed a significant and widespread indicator

of class characteristics and differentiation within our own as well as socially stratified non-Western cultures.

The present study attempts to fill the research void described by Tulkin by examining the antecedents and behavioral correlates of parental perceptions of efficacy. In order to do this, data from two sources were utilized: 1) a national survey of 3000 parents, and 2) a more intensive interview-observation study of 65 mother-infant dyads residing in upstate New York. The national survey data were used to address the question -- what factors are predictive of parental perceptions of efficacy. Data from the 65 mother-infant dyads were used primarily to examine the relation between perceptions of parental efficacy and the quality of care mothers provided for their infants. The national survey data will be discussed first.

Study I:
The Antecedents of Parental Perceptions of Efficacy

As noted earlier, Tulkin argued that there is a positive relationship between socioeconomic status (SES) and parents' perception of control over developmental outcomes. This argument is supported by the consistent finding that SES is positively related to an internal locus of control orientation (Lefcourt, 1976).[1] Likewise studies have shown that race is related to locus of control orientation (Gurin et al., 1969; Lefcourt, 1976; Lachman, 1981). Whites tend to be more internal in their locus of control orientation than blacks and other minorities.

Building on the work of Tulkin and the locus of control literature, national survey data were used to examine the relation between family background characteristics and perceptions of parental efficacy. The specific hypotheses tested are:

1. Controlling for age of parent and number of children, education and income are positively related to perceptions of parental efficacy.

2. Controlling for income and education, membership in a racial minority is negatively related to perceptions of parental efficacy.

3. Parents in two parent families are more likely than

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[1] Locus of control measures assess perceptions of control at a general level. Those who are "internal" in their locus of control orientation generally believe that outcomes are contingent upon their efforts and therefore believe they have considerable control over what happens to them. "Externals" tend to view outcomes as being controlled by fate, luck or chance and therefore are fatalistic in their outlook.

single parents to perceive parents as being able to influence developmental outcomes.

Also examined is the relationship between perceptions of parental efficacy and the parents' beliefs regarding the relative effectiveness of various parenting behaviors (e.g., disciplining the child, setting examples, providing love and affection). Do parents who believe there is little they can do to influence the developing child view the task of parenting differently than the parents who believe they exert considerable influence on the developing child?

Method

Subjects

The data used for this study are taken from the Virginia Slims American Women's Opinion Poll. The data were collected by the Roper Organization in 1974. 3880 people were interviewed. Of these 2922 were women and 958 were men. The data were collected primarily to assess the opinions of women; data on the smaller sample of men were collected for purposes of comparison. According to the Roper Organization, "The samples interviewed were representative of the female and male populations of the continental United States, age 18 and over."

Primary analyses for this study were done on those people interviewed who were parents. 3002 of those surveyed reported having children. 2339 were mothers and 663 were fathers. There is no indication that parents from the same family were interviewed.

Measures

The independent variables, education, income and marital status were assessed with fairly standard survey questions. The race of the respondent was noted by the interviewer and the Roper Organization reported these results using three categories: 1) white, 2) black and 3) other.

The dependent variable of primary interest, perception of parental efficacy, is measured by responses to the following survey question: "Considering all the things that can influence children today, how much effect do you think parents can have in determining how their children will turn out -- a great deal, a fair amount, a little, or almost none?"

The question is stated in such a way that a respondent could conceivably interpret the question in more than one way. The respondent could answer the question at a personal level (i.e., drawing upon personal childrearing experiences to form an opinion), or the respondent could answer the question from the perspective of an observer in the community ("Having observed the process of development, I have concluded that parents have a great deal/very little control over the development of children.") The degree to which these two interpretations are confounded can not be ascertained.

The second outcome of interest concerns parental beliefs regarding the relative effectiveness of various parenting behaviors. This outcome was assessed with the following survey question: Which one or two of these things that parents can do, do you think can have the most influence on how children turn out?" The possible answers, handed to the respondent on a card, are: 1) how much discipline they exercise; 2) the amount of time they spend with children; 3) the examples of morality and ethics they set in their daily lives; 4) how much love and affection they give their children; 5) how liberal they are in letting children have their own way.

Analysis

Multiple regression analysis was used to test the hypotheses. The four level efficacy scale was used as the dependent variable. Of the predictor variables, race and marital status were recoded as white versus nonwhite, and married versus others.

Various models which included theoretically plausible 2-way interactions were examined. Three-way interactions were not examined.

Results

To determine whether or not zero-order relationships were consistent with the guiding hypotheses, each of the independent variables was crosstabulated with the dependent variable. The results of these analyses are presented in Table 1.

Table 1

As shown in Table 1, the results of the bivariate analyses are consistent with the hypotheses. Several of these findings are striking. 1) The difference by race is very large. One out of four of the black parents surveyed expressed the belief that parents can do little or nothing to determine how their children "turn out". The comparable figure for white parents is one out of twenty. 2) College educated parents are more likely than parents with a grade school education to be in the high efficacy group (70% versus 55%). 3) Also noteworthy are the large "within-class" differences in the results. For example, the modal response for black parents and for those with little formal education is "a great deal".

The family background variables used in the bivariate analyses are typically correlated with each other. People with little education are not likely to have high paying jobs; single parents, especially mothers, are not likely to have large family incomes, etc. Consequently, regression analysis was used to

assess the predictive utility of each of the independent variables when the other measures were controlled, as well as to tests for interactions.

The results of the multiple regression analyses are presented in Table 2. In addition to the independent variables discussed earlier (i.e., education, income, race, marital status and sex of parent), number of children and age of parent were entered into the model as covariates. The model predicts responses to the efficacy question at a statistically significant level $F(8,2616) = 26.15$ ($p < .001$). Race, education and income are predictive of the outcome measure ($p < .05$). An interaction term, income x education, was also significant at the .10 level. An examination of a table of cell means clearly shows that parents with both a low income and little education are more likely than parents with either low education or little income to doubt the ability of parents to influence developmental outcomes. For parents with a college education, however, level of income had no discernable impact on perceptions of parental efficacy.

If the same analysis is done with the subsample of nonparents surveyed by the Roper Organization, the same variables (income, education and race) are predictive of their responses to the efficacy question. This suggests that to some extent beliefs about how much one can influence developmental outcomes in children are formed before one has any children.

Table 2

Marital status is not significantly related to the dependent measure in the multivariate analyses, presumably because it is correlated with several of the predictor variables, most notably income. Sex of parent, age of parent and number of children were also nonsignificant.

Having established that income, education and race are related to perceived parental efficacy, we now turn our attentions to the second outcome of interest. Do parents who differ in terms of perceived efficacy also have differing beliefs regarding effective parenting practices? To answer this question parents were divided into three subsamples based on their responses to the efficacy question. Subsample I included all the parents who responded "a great deal". Subsample II is comprised of those who answered "a fair amount" and Subsample III combines those who responded "a little" or "almost none". The percentage of respondents who cited each parental influence as being relatively more important than the others is presented in Table 3. For instance, 44% of the parents who responded "a great deal" to the efficacy question chose "how much discipline they exercise" as a relatively important influence on child outcomes. By comparison, 50% of those who responded "a little" or "almost

none" chose discipline.[2]

Table 3

The results presented in Table 3 indicate that the responses of the parents in the different subsamples were similar in many respects. For example, "the amount of time they spend with their children" was chosen by respondents in all three groups about 43% of the time. However, there were some rather striking differences as well. Half of those who thought that parents exert a great deal of influence cited "examples" as an important influence compared to only 39% of those who believed that parents have little or no control over developmental outcomes. Although "how much love and affection they give their children" was the modal response for all three groups, it was chosen most often by those who believe that parents have a great deal to do with how children turn out. Further analyses (not tabled) demonstrated that this was especially true for nonwhite parents. Sixty-six percent of the nonwhite parents who responded "a great deal" chose love and affection as an important influence compared to 41% of those who responded "a little" or "almost none". This 25 percentage point difference is especially noteworthy given the fact that nearly every parent chose 2 of the 5 possible answers.

Thus analysis of the national survey data indicate that family background characteristics are related to perceptions of parental efficacy. Consistent with Hypothesis 1, income and education are positively related to perceptions of efficacy. The results also support Hypothesis 2 that race is related to parents' perceptions of control when income and education are controlled. The third hypothesis was not supported. Marital status is not predictive of parents' beliefs about their ability to influence child outcomes when SES and race are controlled.

These beliefs about the controllability of desired outcomes are, in turn, related to parents beliefs regarding effective parenting practices. Although differences among the efficacy subsamples are not very large, it appears that low efficacy parents emphasize controlling aversive behavior (e.g., emphasizing discipline) more than high efficacy parents. High efficacy parents seem to put greater emphasis on promoting desired behaviors (e.g., through setting examples).

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[2] Because mothers are over-represented in these analyses, separate analyses were also done for mothers and fathers. The pattern of results was similar for mothers and fathers (e.g., high efficacy mothers and fathers were more likely than low efficacy mothers and fathers to cite love and affection as an important influence). However, overall fathers were more likely to cite discipline and mothers were more likely to cite setting examples.

Study II:

Perceptions of Parental Efficacy and Childrearing Practices

The data presented in Study I are particularly interesting because of the large, representative sample surveyed. Unfortunately, as is often the case in secondary data analysis, many interesting questions could not be addressed because of the limitations of the data set. Foremost among these limitations is the lack of data on parenting behavior. Therefore we were unable to assess the extent to which perceptions of parental efficacy are related to how parents interact with their children and structure the home environment. Secondly, the single item efficacy measure leaves much to be desired. It does not allow us to probe parents' beliefs about developmental influences, nor does it allow us to explore the possibility that parents may believe they have more control over some outcomes than over others. Because of these limitations, a second study was designed to answer many of the questions that could not be addressed with the survey data.

For the follow-up study a questionnaire was developed to explore parents' beliefs about environmental influences on development. The Perception of Parental Efficacy (POPE) scale is comprised of four subscales: 1) perceived contingency; 2) perceived competency; 3) perceived importance of extrafamilial influences; and 4) fatalistic versus nonfatalistic outlook on child's future.

The four subscales represent four possible reasons why a parent might believe he/she has little control over developmental outcomes. The first two subscales are based on Bandura's (1977) self-efficacy theory. It is hypothesized that the degree to which a parent believes he/she can influence developmental outcomes is likely to be influenced by the extent to which outcomes are viewed as being contingent upon the actions of the parents (perceived contingency). In addition to believing an outcome depends on an action or actions (outcome expectation, to use Bandura's terminology), a parent must believe he/she can successfully carry out the action or actions; Bandura calls this an efficacy expectation and the subscale that attempts to assess this is labeled perceived competency. Thus to feel in control, a parent must believe that parenting behaviors influence developmental outcomes and also must believe the necessary behaviors are in his/her repertoire.

Because parents are not the only environmental forces influencing the child, a third subscale was developed to assess parents' beliefs regarding the importance of extrafamilial environmental influences. Items in this subscale are concerned with the influence of schools, peers and aspects of the

neighborhood.[1] It seems likely that parents who view these extrafamilial factors as being potent influences will see themselves as having less control over outcomes.

The fourth subscale assesses the parents' beliefs regarding the opportunities their children are likely to encounter as they approach adulthood. It is hypothesized that some parents who believe they are competent and believe they can influence their children's development may, nevertheless, believe the opportunity structure of the society ultimately dictates the life chances of their children. Thus what happens to their children in the long run may have little to do with their efforts.

The four subscales were used to test the following hypothesis:

> 4. It is hypothesized that the more control mothers believe they have over developmental outcomes the more they will do to try to provide their children with optimal rearing conditions, as assessed with the HOME inventory. Specifically, it is hypothesized that: A) perceived contingency and perceived competency are positively related to the quality of the rearing environment, and B) that perceived importance of extrafamilial influences and fatalistic outlook on child's future are negatively related to the quality of the rearing environment.

A second measure developed by Knight (1983) to assess how much control parents believe they have over outcomes in three domains -- cognitive, social-emotional and behavioral style--was also filled out by study participants. Knight used the measure in a study of Australian families with children aged 4, 7 and 10. She found that both fathers and mothers perceived themselves as having more influence over social-emotional outcomes than cognitive outcomes.

The Knight Perceived Influence Scale (KPIS) was used to test two hypotheses:

> 5. Mothers in the U.S., like parents in Knight's Australian sample, perceive themselves as having greater influence over their children's social-emotional development than over their children's cognitive development.
>
> 6. Mothers who believe they have considerable control over cognitive outcomes are more likely than other mothers to create an intellectually supportive environment in the home.

Another question that could not be addressed with the survey data

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[1] Two items concerning television were included in the original conceptual grouping of items. These items were dropped on the basis of reliability results.

that is given consideration here is: are characteristics of the children, specifically temperamental characteristics, related to mothers' beliefs regarding their ability to influence developmental outcomes?

Method

Subjects

Sixty-five mother-infant dyads, residing in Tompkins County, New York were recruited for this study. The infants ranged in age from 9-23 months with a mean age of 15 months. Fifty-two percent of the infants were male and 43% were first born children.

The mothers ranged in age from 18-39 years, with a mean of 26 years. Most were white (95%), married (83%) and not employed outside the home at the time of the interview (60%).

The families were a heterogenous group with regard to socioeconomic status. Mothers' education ranged from 9-20 years with a mean of 12.7 years. Forty-five percent of the mothers had 12 years of education. Seventeen percent had less than 12 years and 39% had more than 12 years. Only 12% had a four year college degree. The median family income category for the sample was $11,000 to $14,000, with a range from less than $5,000 to more than $35,000.

Most of the mothers were recruited either through the WIC program (43%) or at Well Child Clinics (35%). The remaining mothers (22%) were referred by mothers who had already participated in the study.

Measures

Dependent Variables:

1) Home Observation for Measurement of the Environment (HOME): The quality of care mothers provide for their infants is operationally defined as the mothers' scores on Caldwell and Bradley's (1979) HOME inventory. The HOME is an observation/interview instrument developed to assess quantitative and qualitative aspects of the rearing environment. The version used in the present study is the 45 item measure developed for infants and toddlers. Each of the items is scored "yes" or "no" and all items are weighted equally. A total score for the HOME is determined by counting the number of items scored "yes". Although the inventory is divided into six subscales, only the total score was used in the analyses reported here.

Several studies have demonstrated that the HOME is a strong predictor of various measures of cognitive ability assessed during the early childhood period. Moreover, the HOME is predictive of cognitive outcomes in children when maternal IQ is controlled (Ramey et al., 1984); Gottfried and Gottfried, 1984).

2) Global Rating Scales: At the time of the home interview, in addition to scoring the HOME inventory, the interviewer scored two global rating scales: 1) Maternal Warmth, and 2) Cognitive Stimulation. The warmth scale is a five point scale that assesses the amount of warmth and affection the mother displayed toward her child during the visit to the home. Mothers who impressed the interviewer as being warm, affectionate and positive in their dealings with their babies were given a high score on the scale.

The second scale, the Cognitive Stimulation scale, is a four point scale. If the interviewer saw evidence that the mother engaged in activities with her child that promoted cognitive development, she was given a high rating on this scale.

Independent Variables:

3) Perception of Parental Efficacy (POPE) Scale: The POPE was developed to assess parents' beliefs regarding environmental influences on development. The POPE is divided into four subscales. For each of the subscales, study participants are asked to respond to several statements on a 6 point Likert scale. Responses range from "strongly disagree" to "strongly agree". On the basis of conceptual criteria, items were assigned to each of the subscales prior to data collection. Following the data collection, the internal consistency of the a priori clusters was estimated. Items lowering the reliability estimate, Cronbach's alpha, were deleted. The remaining items were summed to produce a score for each subscale.

A) Perceived Contingency: The perceived contingency subscale is comprised of six items. Higher scores indicate the mothers perceive developmental outcomes as being contingent upon parenting practices. For this subscale, the reliability coefficient is .75.

B) Perceived Competency: The perceived competency subscale is comprised of two items. Higher scores indicate that the mothers perceive themselves as being relatively competent parents. The reliability estimate for this subscale is .82.

C) Perceived Importance of Extrafamilial Influences: The perceived importance of extrafamilial influences subscale consists of six items. Mothers with higher scores perceive extrafamilial forces (e.g., peers) as being potent developmental influences beyond their control. Alpha equals .68.

D) Fatalistic Outlook on Child's Future: The final subscale assesses whether or not the mother has a fatalistic outlook on her child's future. Mothers who are fatalistic have a higher score on this subscale. This subscale is comprised of six items and Cronbach's alpha equals .63.

4) Knight Perceived Influence Scale (KPIS): The KPIS assesses parents' perceptions of influence in three domains: 1) behavioral style; 2) cognitive outcomes, and 3) social-emotional outcomes. There are five items in each domain and for

each item the parent is asked to assess the extent to which she can influence the outcome specified in the item on a four point scale ranging from "very little or none" to "a lot".

In addition to looking at the items individually, for the present study, items in the respective domains were summed to produce a total score for each of the three domains. For each domain (e.g., behavioral style) scores can range from 5 to 20. Higher scores indicate that the mothers believe they have considerable influence over the developmental outcomes specified in the 5 items in a given domain.

5) Infant Characteristics Questionnaire (ICQ): The ICQ was developed by Bates and his colleagues (Bates, Freeland and Lounsbury, 1979) to assess parents' perceptions of their infants' temperament. The version of the questionnaire for 13 month old infants was used here. Nine items loading on the "fussy/difficult/demanding" factor were included on a questionnaire. Each item is scored on a seven point scale. The scores of the items are added together for a total temperamental difficultness score. A higher score indicates that the child is perceived as being fussy, demanding and difficult.

Procedures

A home interview was scheduled with the mother for a time when her child was likely to be at home and awake. About one week before the interview, mothers received the questionnaires in the mail. They were asked to complete the questionnaires prior to the home interview so that they could be picked up by the person doing the interview.

The HOME inventory and the global rating scales were scored during the interview. Observation items were scored for one hour. After the behavioral measures had been scored, the interviewer reviewed the questionnaires and asked the mother to answer any missed items.

Results

It was hypothesized that mothers who perceive developmental outcomes as being contingent on their efforts provide their infants with relatively supportive rearing environments, as assessed with the HOME. The results presented in Table 1 are consistent with this hypothesis; the correlation between the perceived contingency subscale and the HOME inventory is .41. The more that mothers perceived developmental outcomes as being influenced by parenting practices, the more likely they were to provide their infants with supportive rearing environments as assessed with the HOME inventory.

Contrary to expectations, mothers who perceive themselves as being relatively competent parents have lower scores on the HOME than mothers who are less self-assured ($r = -.30$).

Table 4

It was hypothesized that mothers who believe that extrafamilial factors, such as peers and schools, greatly influence developmental outcomes are likely to see themselves as having less control over outcomes than other mothers. Thus we expected to find, and did find, a negative relation between the extrafamilial influences subscale and scores on the HOME inventory ($r = -.31$).

The fatalism subscale assesses the mothers' beliefs regarding the opportunities their children are likely to have as they approach adulthood. It was hypothesized that mothers who believe their children have few opportunities to succeed because of the opportunity structure of the society will have less of an incentive to foster the skills (e.g., academic skills) that are associated with upward mobility in our society. As shown in Table 4, mothers who are relatively fatalistic have lower HOME scores but the relation is not significant ($r = -.15$). One of the reasons why this correlation is so low is that there was little variability in the responses the mothers gave to the items in this subscale. Nearly all the mothers were very optimistic about their children's futures. It would be interesting to know if these mothers become less optimistic as their children advance through the elementary grades.

Multiple regression analysis was used to assess the extent to which each of the subscales is related to the quality of the rearing environment (assessed with the HOME) when the others are controlled. The standardized betas for the four subscales are: perceived contingency (.26), perceived competency (-.23), fatalistic outlook (-.21), and extrafamilial influences (-.15). Together, the four subscales account for 25% of the variance in HOME scores.

Next we turn our attention to the question: do mothers believe they have more control over some outcomes than over others. It was hypothesized that mothers in the U.S., like the Australian parents sampled by Rosemary Knight, believe they have more control over social-emotional outcomes than they have over cognitive outcomes. The results presented in Table 5 are consistent with this hypothesis. Of the three domains, the mothers indicated they have the most influence over social-emotional outcomes and the least control over cognitive outcomes.

Table 5

Of greater interest here is the relation between beliefs about control over outcomes in these domains and parenting

practices. Items scores for each of the three domains were summed to produce a total score for each domain. The correlations between these three domain scores and the maternal behavior measures (the HOME and the two global rating scales) were examined as an additional check on the hypothesis that mothers who believe they have considerable control over developmental outcomes provide their infants with more supportive environments than mothers who view themselves as being less influential.

The most striking finding of these analyses is that mothers who believe have considerable influence over cognitive outcomes are more likely than other mothers to foster cognitive development, as assessed with the rating scale ($r = .40$). In contrast, the extent to which the mothers believe they can influence cognitive outcomes has little bearing on how warm they are in their interactions with their children ($r = .09$). Although no causal relations can be determined, these results at least suggest that mothers who believe they can influence cognitive outcomes act in accordance with these beliefs (See Table 6).

Table 6

The final question addressed in this study concerns infant temperament. Do parents who perceive their infants as being relatively difficult believe they have less control over developmental outcomes than parents who perceive their infants as being relatively easy? The analyses done to address this question produced an interesting pattern of results. These results are presented in Table 7.

Table 7

Although the correlations between the measure of difficult temperament and the Knight Perceived Influence Scales are negative, suggesting that temperamental characteristics do influence parents' perceptions of control, a more fine grained analysis shows that this association is found only if the index child is second or later born. Multiparous mothers with difficult infants are likely to doubt their ability to influence the development of their children, especially in the social-

emotional and behavioral style domains.[2] The correlations between the perceived influence scales and the perceived temperament measures are nonsignificant for the primiparous mothers in the sample.

An interesting finding, that parallels this finding, is that difficult infants elicit relatively less supportive care, as assessed with the HOME, if they are second or later born (r = -.23). For first born children, the correlation between perceived difficult temperament and HOME scores is positive (r = .27). First born children who are perceived as being relatively difficult receive more supportive care than their easier peers.

Discussion

Three hypotheses were tested in Study II. The first asserts that the more control mothers believe they have over developmental outcomes the more they will do to try to provide their children with optimal rearing conditions. Although no causal relations can be determined, the data are generally consistent with this hypothesis. Of the four POPE subscales, "perceived contingency" is the best predictor of the quality of care mothers provide for their infants. The perceived contingency subscale assesses the extent to which parents believe developmental outcomes are contingent upon parenting practices.

The relation between only one of the four POPE subscales and scores on the HOME inventory was not in the predicted direction (perceived competency). Contrary to expectations, mothers who perceive themselves as being the most competent parents do not provide the most supportive environments for their infants. There are at least two possible explanations for this finding. First, a certain amount of self-doubt in regard to parenting may be indicative of a realistic appraisal of the subtleties and complexities involved in good parenting. Those who appreciate this complexity may have reservations about how well they can deal with the challenges of parenting, but given this understanding, may actually perform more competently in the parenting role.

The second explanation is concerned with reference groups. Both the items in the perceived competence subscale ask the mothers to compare themselves to other mothers they know. The most skillful mothers in the sample may associate with other, very skillful mothers who serve as role models. Having good role models may help to make someone a more skillful parent, but in comparison, may make one feel "average" or relatively incompetent. Mothers who are not surrounded by good role models may actually be more competent than their peers, but may be less skillful than other mothers in the sample. These two explanations are not mutually exclusive and it is possible that

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[2] The KPIS asks parents to indicate how much they can influence the development of the index child. No information is available regarding how much control they believe they have over the developmental outcomes of their other children.

both are correct to some degree.

The second hypothesis in Study II asserts that mothers believe they have more control over social-emotional outcomes than cognitive outcomes. The data support this hypothesis. Although, on average, the mothers believe they have at least "a fair amount" of control over all 15 outcomes specified in the Knight Perceived Influence Scale, they see themselves as having the most control over the 5 outcomes in the social-emotional domain and the least control over the 5 outcomes in the cognitive domain.

Mothers who think they have considerable influence in the cognitive area provide their infants with more stimulating environments than other mothers. Thus the third hypothesis in Study II is also supported. Apparently mothers who believe they have considerable control over cognitive outcomes make a greater effort than other mothers to provide their infants with intellectually supportive environments. However, because only correlational data are available, no definitive conclusions regarding causality can be drawn.

In addition to testing these three hypotheses, the relation between difficult temperament and parents' perceptions of control over outcomes in various domains were also examined. No significant relations were found between difficult temperament and parents' perceptions of control if the index child was the first born child. However, for children who were second or later born and difficult, mothers tended to believe they had less control over developmental outcomes especially in the social-emotional and behavioral style domains.

In sum, it appears that both family background characteristics and to some extent characteristics of the children contribute to parental perceptions of efficacy. The data also indicate that mothers who believe they have considerable control over developmental outcomes provide more supportive care for their infants than mothers who believe they have less control over outcomes.

One final question that should be addressed is: what are the implications of these findings for parent educators and others who work with parents. Clearly there are limits to what parents can do to influence outcomes, and parents should not have to feel guilty for characteristics or behaviors of their children that do not conform to their highest expectations. Nor should parents be burdened with the idea that their every action has an enduring and irreversible effect on their children. Ideally parents should be able to relax and enjoy their roles as parents and at the same time remain cognizant of the fact that there is much they can do to create conditions in the home that will result in favorable outcomes for their children. It seems likely that the more parents understand about development the more likely they are to adopt a relaxed yet involved approach to childrearing.

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Table 2

Multiple Regression Analysis:
Predictors of Perceptions of Parental Efficacy

Dependent Variable:
perception of parental efficacy

Independent Variables:
education, income, race, marital status, sex of parent, age of parent and number of children

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Model

Multiple R	.27
R Square	.07
Standard Error	.69
F (8,2616)	26.15***

Variables in the Equation

Variable	Beta	F
Income	.21	5.92**
Race	-.21	118.09***
Education	.17	9.68***
No. of Children	-.02	0.72
Sex of Parent	-.01	0.32
Age of Parent	.01	0.22
Marital Status	.00	0.02
Income * Education	-.21	3.12*

* p < .10
** p < .05
*** p < .01

Note: race, marital status and sex of parent are dichotomous variables: white = 0 and nonwhite = 1
married = 0 and others = 1
mothers = 0 and fathers = 1

TABLE 3

Perceptions of Parental Influences
by Efficacy

(percentages)

Parental Influences	Efficacy: Great Deal (N=1797)	Fair Amount (N=939)	Little or None (N=207)
Discipline	44	46	50
Time	43	43	44
Examples	50	48	39
Love	64	61	53
Liberal	7	10	18
None	0	0	1
Don't know	0	0	1

TABLE 4

Correlations: POPE, SES and HOME

	Mothers' Education (N=65)	Family Income (N=64)	HOME Total (N=65)
Perceived Contingency	.21*	.22*	.41*
Perceived Competency	.02	-.05	-.30*
Extrafamilial Influences	-.28*	-.20+	-.31*
Fatalistic Outlook	-.13	-.13	-.15

+ P < .10

* P < .05

TABLE 5

Means: Knight Perceived Influence Scales

(N=64)

Note: 4 point scale -- Higher scores indicate that the mothers believe they have a great deal of control over the specified outcome.

Social-Emotional	Mean	Std. Dev.
3) Is independent and able to do things alone	3.3	.668
6) Is well-mannered and well-behaved	3.6	.638
9) Has strong moral values	3.4	.819
12) Expresses love and affection	3.9	.527
15) Is not shy with strangers	2.8	.833
Mean of the means	3.40	
Cognitive		
2) Understands easily or catches on quickly	2.8	.782
5) Is imaginative and creative	2.9	.870
8) Finds it easy to put ideas and needs into words	3.0	.836
11) Is able to work things out, think, reason and solve problems	3.2	.739
14) Does well at school (e.g., is good at reading, arithmetic and spelling)	3.0	.922
Mean of the means	2.98	
Behavioral Style		
1) Trys hard at things	3.3	.664
4) Has a sense of humor	3.1	.797
7) Is not easily distractable and holds interests in tasks	2.5	.687
10) Is energetic and active	3.3	.843
13) Is curious and interested in how and why things happen	3.5	.640
Mean of the means	3.14	

TABLE 6

Correlations: Knight Perceived Influence Scales

(N=65)

	Social-Emotional	Cognitive	Style
HOME Total	.30*	.25*	.18
Warmth Scale	.31*	.09	-.02
Cognitive Stimulation Scale	.28*	.40*	.12

* $p < .05$

TABLE 7

Correlations: Perceived Temperament and Knight Scales

	Perceived Temperament		
	Total Sample (N=65)	Primiparous Mothers (N=28)	Multiparous Mothers (N=37)
Knight Perceived Influence Scales			
Social-Emotional	-.27*	-.04	-.42*
Cognitive	-.13	.20	-.34*
Behavioral Style	-.18+	.14	-.41*

+ P < .10

* P < .05